

## CLAIMS

1. A method for the production of aluminum hydroxide, comprising the steps of suspending aluminum hydroxide obtained by the Bayer process in a sodium aluminate solution to obtain slurry and elevating a temperature of the slurry from 60°C or less to 90°C or more.
2. The method for the production of aluminum hydroxide according to claim 1, wherein the slurry prior to the step of elevating the temperature is with a ratio  $A/C$  of 0.4 or less, wherein  $A$  represents an alumina concentration (g/liter) and  $C$  represents a sodium hydroxide concentration (g/liter) in the sodium aluminate solution.
3. The method for the production of aluminum hydroxide according to claim 1 or claim 2, wherein in the step of elevating the temperature, a time  $H$  taken to elevate the temperature of the slurry from 60°C or less to 90°C or more is 15 minutes or less.
4. The method for the production of aluminum hydroxide according to claim 3, further comprising the step of retaining the slurry, after the step of elevating the temperature of the slurry, at a temperature of 85°C or more for at least  $(15 - H)$  minutes.
5. The method for the production of aluminum hydroxide according to any one of claims 1 to 4, further comprising the step of exerting centrifugal force to the slurry after the step of elevating the temperature of the slurry.
6. The method for the production of aluminum hydroxide according to any one of claims 1 to 5, wherein the aluminum hydroxide is with a ratio of solubility by elevating the temperature represented by a general formula: ratio of solubility (%) =  $C$  before elevating the temperature  $\times (A/C$  after elevating the temperature  $- A/C$  before elevating the temperature)  $\times 1.53$ /aluminum hydroxide concentration of the slurry before

elevating the temperature  $\times 100$ , wherein  $A$  represents an alumina concentration (g/liter) and  $C$  represents a sodium hydroxide concentration (g/liter) in the sodium aluminate solution, which ratio is less than 30%.

7. The method for the production of aluminum hydroxide according to claim 5 or claim 6, wherein the centrifugal force is 300 G or more.

8. The method for the production of aluminum hydroxide according to any one of claims 5 to 7, wherein the centrifugal force is exerted with a continuous centrifugal separator.

9. The method for the production of aluminum hydroxide according to any one of claims 1 to 8, wherein the step of elevating the temperature of the slurry is carried out using a double-tube heat exchanger.

10. An aluminum hydroxide having an average particle diameter  $D$  in a range of 1 to 10  $\mu\text{m}$ , a BET specific surface area  $S$  of 1.5  $\text{m}^2/\text{g}$  or less, a degree of aggregation  $D/D_{\text{bet}}$  of less than 3, wherein  $D_{\text{bet}}$  stands for a particle diameter calculated by spherical approximation from the BET specific surface area  $S$  as  $D_{\text{bet}} = 6(S \times \rho)$ , in which  $\rho$  denotes a specific gravity of the aluminum hydroxide, and a content of particles having diameters exceeding 20  $\mu\text{m}$  that is 0.5% or less by mass.

11. The aluminum hydroxide according to claim 10, wherein the content of particles having diameters exceeding 20  $\mu\text{m}$  is 0.1% or less by mass.

12. An aluminum hydroxide obtained through the method claimed in any one of claims 1 to 9.

13. A composition comprising the aluminum hydroxide as a filler claimed in any one of claims 10 to 12.
14. The composition according to claim 13, wherein the composition comprises a matrix material of at least one of rubber and plastic.